

[Name of Document] Abstract

[Summary]

[Problem] An object of the present invention is to provide a laser irradiation apparatus being able to suppress the unevenness of the crystallinity or the state of the surface of the semiconductor film and to perform homogeneous crystallization of the semiconductor film. Moreover, other objects of the present invention are to provide a method for manufacturing a semiconductor device with the use of the laser irradiation apparatus being able to suppress the variation of the on-current, the mobility, and the threshold of TFT and to provide a semiconductor device made by the manufacturing method.

[Means for Solving] A method for manufacturing a semiconductor device comprising the steps of: adding first noble gas to a semiconductor film formed over an insulating surface, and irradiating first and second laser light to the semiconductor film added with first noble gas in an atmosphere of second noble gas, wherein first laser light has a wavelength of a harmonic, wherein second laser light has a wavelength of a fundamental wave, and wherein a magnetic field is applied to the semiconductor film added with first noble gas when first and second laser light are irradiated.

[Selection Figure] FIG. 1